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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

COREPHOTONICS, LTD.

Plaintiff,

vs.

APPLE INC.

Defendant.

Case No. 5:17-cv-06457-LHK (NCx)

[Assigned to The Honorable Lucy H. Koh, Courtroom 8 - 4th Floor]

FIRST AMENDED COMPLAINT

DEMAND FOR JURY TRIAL

Original Complaint Filed:
November 6, 2017

COMPLAINT

1. Plaintiff Corephotonics, Ltd. ("Corephotonics") hereby submits its First Amended Complaint against Defendant Apple Inc. ("Apple") and alleges as follows:

NATURE OF THE ACTION

2. This is a civil action for infringement under the patent laws of the United States, 35 U.S.C. § 1, *et seq*.

3. The United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,402,032 (the "'032 patent"), entitled "Miniature Telephoto Lens Assembly," on July 26, 2016. Corephotonics is the legal owner of the '032 patent by assignment. A true and correct copy of the '032 patent is attached hereto as Exhibit A.

4. The United States Patent and Trademark Office duly and legally issued U.S. Patent 9,568,712 (the "'712 patent"), entitled "Miniature Telephoto Lens Assembly," on February 14, 2017. Corephotonics is the legal owner of the '712 patent by assignment. A true and correct copy of the '712 patent is attached hereto as Exhibit B.

5. The United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,185,291 (the "'291 patent"), entitled "Dual Aperture Zoom Digital Camera," on November 10, 2015. Corephotonics is the legal owner of the '291 patent by assignment. A true and correct copy of the '291 patent is attached hereto as Exhibit C.

6. The United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,538,152 (the "'152 patent"), entitled "High Resolution Thin Multi-Aperture Imaging Systems" on January 3, 2017. Corephotonics is the legal owner of the '152 patent by assignment. A true and correct copy of the '152 patent is attached hereto as Exhibit D.

7. Apple has infringed and continues to infringe one or more claims of each of the '032 patent, the '712 patent, the '291 patent, and the '152 patent (collectively the "Asserted Patents") at least by importing, using, selling, and/or offering to sell the iPhone 7 Plus and iPhone 8 Plus (the "Accused Products"). Corephotonics seeks, among other things, monetary damages and injunctive relief.

THE PARTIES

8. Plaintiff Corephotonics is a company organized and existing under the laws of the State of Israel with its principal place of business at 25 HaBarzel St., Tel Aviv 6971035, Israel.

9. Defendant Apple is a corporation organized and existing under the laws of the State of California with its principal place of business at 1 Infinite Loop, Cupertino, California.

JURISDICTION AND VENUE

10. This Court has subject matter jurisdiction over Corephotonics' claims for patent infringement pursuant to the 28 U.S.C. §§ 1331 and 1338(a).

11. Apple is subject to this Court's personal jurisdiction because Apple resides and has its primary place of business within this District. This Court also has personal jurisdiction over Apple because Apple has committed and induced acts of patent infringement and has regularly and systematically conducted and solicited business in this District by and through at least its sales and offers for sale of Apple products and services, and other contractual arrangements with Apple customers and third parties using such Apple products and services located in and/or doing business in this District.

12. Venue is proper in this District under 28 U.S.C. §§ 1391(b) and 1400(b) because Apple resides in this District, has a regular and established place of business in this District, and has committed acts of infringement in this District.

INTRADISTRICT ASSIGNMENT

13. This action for patent infringement is assigned on a district-wide basis under Civil L.R. 3-2(c).

FACTUAL ALLEGATIONS

A. Corephotonics' Dual Camera Technology Innovations

14. Corephotonics is a pioneer in the development of dual camera technologies for mobile devices. Corephotonics was founded in 2012 to develop the next generation of mobile phone cameras. Its founders brought with them decades of experience in the fields of optics and miniature digital cameras and were led by Dr. David Mendlovic, a Professor at Tel Aviv University and former Chief Scientist of the Israeli Ministry of Science.

15. Corephotonics' dual-aperture camera technology changes the way smartphones take pictures by using advanced lens design and sophisticated computational optics. The advanced lens design is used to create a miniature telephoto lens that can fit within the confines of a modern, thin smartphone but still provide the superior image quality and light sensitivity demanded by smartphone consumers.

16. Corephotonics' innovative dual-aperture camera technology uses two fixed-focal length lenses, a wide-angle lens as typically found in smartphones with single-aperture cameras, and a miniature telephoto lens. Traditional optical zoom is accomplished by using a variable focal length lens array. At the small formats required for smartphones, however, it is difficult to reliably include movable components, so smartphones were stuck with small, fixed lenses. This means that in a typical single-aperture smartphone camera, all zoom functionality is provided with digital zoom, *i.e.*, a processor digitally modifies the image to create a magnified but poorer resolution image. With Corephotonics' dual-aperture camera technology, by contrast, the second camera with telephoto lens provides much higher optical resolution than the wide-angle camera. Images from both of these cameras can also be processed by computational algorithms to create an effectively greater level of zoom without degrading image quality by combining digital and optical zoom.

17. For video, which captures thirty or more frames per second, Corephotonics discovered that implementing image fusion for each frame demands higher than normal processing resources and power. At the same time, the beneficial pixel finesse achieved by image fusion is less observable at the rapid frame rate of HD video due to human perception limits. Corephotonics thus developed technology for dual-aperture cameras where image fusion is only used when taking still pictures, but not for video. In video, when zooming in, digital zoom is used first on the image from the wide-angle camera only and then switched to the image from the telephoto camera only. When zooming back out, a similar transition happens from using the telephoto camera only, switching back to the wide-angle camera only. This approach conserves resources and power. Because the two lenses are different and necessarily view the subject from different points of view, Corephotonics also developed special processing that can ensure that the transition from the wide lens to the telephoto lens and back would be smooth.

18. Corephotonics has filed for and received patents on its advanced telephoto lens designs, multi-aperture camera technologies, and optical processing technologies, including the patents-in-suit. Corephotonics is continuing to develop multi-aperture camera technologies, and it has filed and obtained patents on these technologies as well.

19. The press recognized Corephotonics' pioneering advances in dual-aperture camera technology for smartphones. For example, Corephotonics demonstrated its dual-aperture camera technology at Mobile World Congress (MWC) 2014 and received very positive reviews from the tech media, including headlines such as "Corephotonics' dual-camera tech will change smartphone imaging"[1] and statements like "We think [the Corephotonics dual camera technology] has the potential to change the direction of smartphone photography."[2]

20. Corephotonics now employs over 60 staff, the majority of whom are engineers, scientists, and technologists. Corephotonics depends on its patents to protect its business and continue to develop its innovative miniaturized multi-camera technologies, for mobile devices and new applications. The customers of Corephotonics' technology offerings include leading camera module and mobile device manufacturers.

21. Corephotonics spent years demonstrating its technologies to Apple and discussing potential collaborations and business arrangements. Apple, however, refused. Instead, Apple has gone ahead and marketed its newest generations of iPhones with dual cameras that employ Corephotonics' innovative designs – without any regard to Corephotonics' intellectual property rights.

B. Apple's Interest in Corephotonics' Technology and Intellectual Property

22. As one of its first acts as a company, Corephotonics reached out to Apple in the hopes of establishing a strategic partnership. The founding team contacted someone they knew

[1] "Corephotonics' dual-camera tech will change smartphone imaging," *C|Net*, https://www.cnet.com/news/corephotonics-dual-camera-tech-will-change-smartphone-imaging/

[2] "Best of Mobile World Congress: Samsung Galaxy S5, Mozilla $25 phone, smart glove and more," *C|Net*, "https://www.cnet.com/news/best-of-mobile-world-congress-samsung-galaxy-s5-mozilla-25-phone-smart-glove-and-more/

from their previous work in digital camera technology, Graham Townsend, then Senior Director Camera Hardware at Apple, highlighting some of the innovations Corephotonics was working on related to a high-end compact camera module ("CCM") solution. Throughout 2012, Corephotonics and Apple had meetings regarding the early technologies that Corephotonics was developing during that time. At an early meeting in June 2012, Corephotonics told Apple of its intention to protect its current and future developments in multi-camera technology with patents.

23. In May 2013, an Apple engineer emailed Corephotonics communicating Apple's interest in learning more about Corephotonics' other technology offerings and intellectual property, in particular a telephoto lens that for a dual-aperture camera that included a telephoto lens and associated software algorithms and expressed interest in learning more about that invention. Corephotonics provided a brief description of its telephoto lens architecture that was part of its intellectual property and referenced other pending patents.

24. In June 2013, a meeting was held at Corephotonics' headquarters in Tel Aviv, Israel with Mr. Townsend and other Apple camera engineers. At this meeting Corephotonics described its intellectual property and technology plans, which included a detailed presentation and discussion of computational algorithms for dual-aperture cameras and numerous system architecture and design details for a dual system. These design details closely resembled what was eventually deployed in the market by Apple. At the same time, Corephotonics also engaged in engineering discussions of its telephoto lens design, and sent a file describing the lens design and including key design details. Corephotonics provided Apple with a full set of technology descriptions covering what was discussed. At the meeting, Corephotonics provided Mr. Townsend with a USB drive containing presentation files, which included a Corephotonics' five element telephoto lens design layout, information about Corephotonics' algorithm, and a slide describing Corephotonics' pending patent applications and patent plans, including filing of applications underlying the '032, '712, and '291 patents, and a description of the provisional application that it had filed that included image fusion features that later issued as the '152 patent. Corephotonics followed up with further correspondence, which included technical descriptions and responses to Apple's technical inquiries. Later, in October 2013, a larger team, this time including members of

Apple's image processing and system groups, visited Corephotonics' Tel Aviv office again for more in-depth discussions, which included dual camera processing methods.

25. During this period through late 2014, Corephotonics personnel visited Apple's facilities in California on numerous occasions, meeting with key members of Apple's camera team, including the leaders of Apple's hardware and software efforts. Corephotonics personnel set up numerous simulations and demonstrations of its technology for Apple. Apple further evaluated Corephotonics' test boards, lens modules, and simulation files at its own facilities, in the absence of Corephotonics personnel.

26. During this period in 2014, Corephotonics learned from the contractor who was manufacturing Corephotonics' prototype telephoto lens modules that Apple had sought Corephotonics' samples from them without notifying Corephotonics, and the contractor had rejected that request. Corephotonics then contacted Apple and agreed to provide Apple with physical samples of Corephotonics' lens and camera modules, which embody the claimed designs of Corephotonics' '032 and '712 patents.

27. Apple also received "black box" simulation files for Corephotonics' lens designs and a software simulator for the computational algorithms for image processing, which simulated embodiments of claimed features of the '152 and '291 patents.

28. In May 2014, Corephotonics was told by Apple that high-level technical staff and executives in Apple's camera engineering group had observed a demonstration of Corephotonics' technology and had reacted very positively. Corephotonics understood that Apple's management had determined to move forward and engage with Corephotonics.

29. In June 2014 Apple expressed interest in licensing Corephotonics' dual camera algorithms and software for commercial use in its devices, and a meeting was arranged for July 30, 2014. Apple provided a business proposal prior to that meeting. Corephotonics provided Apple's business team with a description of its range of technology offerings and provided Apple with a description of its (then) over ten patent families, including low-profile telephoto lens designs for mobile cameras and algorithms for improving dual-aperture cameras with telephoto lenses. During this meeting, in response to Corephotonics claim about the commercial value of its patents,

Apple's lead negotiator responded that even if Apple infringed, it would take years and millions of dollars in litigation before Apple might have to pay something.

30. By August, business negotiations were halted by Apple. Technical discussions between Apple and Corephotonics continued until later that year, while Corephotonics was waiting to hear from Apple's business team.

31. On November 18, 2014, an article appeared in the media reporting that Apple would potentially adopt dual-aperture camera technology, suggesting that it would be similar to the dual camera technology that Corephotonics had developed and presented earlier that year, and which Corephotonics had been discussing over this period with Apple.[3] Apple did not engage in further efforts to obtain a license to Corephotonics' intellectual property.

32. In January 2016, after sporadic contacts with Apple personnel through 2015, Corephotonics again reached out to Apple. Corephotonics' CEO, Dr. Mendlovic, emailed a high-level hardware executive suggesting continued collaboration. Corephotonics pointed out, "Corephotonics had the privilege to be the first to invent, implement and demonstrate dual cameras which outperform the best single compact cameras. Thus, our IP portfolio is the widest and, in our opinion, has the best defensive value for such applications." Corephotonics offered to discuss collaboration and joint projects with Apple. The Apple executive wrote back that he was looking into it, and that another Apple engineer would be in touch. That engineer and a colleague from Apple visited Corephotonics' facility in Israel for an in-person meeting, at which Corephotonics presented some of its most recent technology offerings.

33. At that meeting and in subsequent meetings and communications, Apple expressed interest in learning more about Corephotonics' technologies. Corephotonics indicated a desire to formalize a business arrangement, and in June 2016, Mr. Townsend emailed Corephotonics introducing them to Apple personnel on its business side to engage in setting up a deal that would govern the technology collaboration. Corephotonics sent Apple a proposal, and in August 2016,

[3] *See* "Apple May Introduce 'Biggest Camera Jump Ever' in Next-Generation iPhone," https://www.macrumors.com/2014/11/18/apple-biggest-camera-jump-ever/.

Apple followed up and asked Corephotonics to provide a proposal for licensing its intellectual property to Apple. Corephotonics informed Apple that its intellectual property included over 25 patent families, and discussions continued to proceed.

34. On September 7, 2016, Apple announced the iPhone 7 Plus, which included, for the first time for Apple, a real dual camera assembly including a telephoto camera for enhanced zoom – one of Corephotonics' core innovative concepts. Apple specifically touted the telephoto camera on iPhone 7 Plus as a key feature. The hardware specifications and important software functionalities were similar to what Corephotonics had shown and demonstrated to Apple throughout the aforementioned exchanges starting in 2013.

35. By October 2016, negotiations between Corephotonics had stopped progressing, and Corephotonics arranged a face-to-face meeting with Apple. Two meetings were set up, which included technical and business personnel from Apple. During these meetings, Corephotonics offered to negotiate an agreement with Apple for access to Corephotonics' technology offerings and patents. Corephotonics offered to share its patents with Apple employees at both meetings. At the second meeting, Mr. Townsend stated that he was not permitted by his company to look at the patents, and he asked Corephotonics instead to send it to Apple's business personnel instead. One of Apple's business personnel followed up immediately thereafter with an unsolicited email stating, "Please do not send any patents to us until further notice. Legal counsel might reach out with any questions."

36. Corephotonics did not hear from Apple's legal counsel after receiving that email. In an attempt to continue efforts to develop a business relationship, during 2017 Corephotonics again met with and communicated with individuals from Apple's camera team on several occasions, but Apple no longer expressed interest in continuing to discuss a collaboration with Corephotonics.

37. On October 31, 2017, Corephotonics wrote to Apple informing it that after examining Apple's iPhone 7 Plus and 8 Plus cameras and zoom functionality, it believed that these products infringed Corephotonics' patents, including the '032, '712, '291, and '152 patents. Apple did not respond. On November 6, 2017, Corephotonics filed the original Complaint in this action,

which included a description of the infringement by Apple's iPhone 7 Plus product of the Asserted Patents.

38. During the period that Apple was in discussions with Corephotonics, and investigating and evaluating Corephotonics' technology, Apple was filing its own patent applications on small-format camera designs, including telephoto cameras that could be used in a mobile device. During this time, Corephotonics' patents and related patent applications were significant in the art. Apple was well aware of Corephotonics' patents and related patent applications, including the patents in suit and applications that issued as the patents in suit, as it sought to obtain its own patents over Corephotonics' prior art.

39. For instance, Apple filed U.S. Patent Application No. 14/069,027 (the "'027 application"), which later issued as U.S. Patent No. 9,223,118. On February 18, 2015, the U.S. Patent & Trademark Office issued an Office Action in the prosecution of the '027 application. The examiner cited published application U.S. Pub. App. No. 2015/0029601A1 to Dror, *et al.* (the "Dror Application"), as anticipating, or rendering obviousness in combination with other references, all the pending claims of the '027 application. The Dror Application is a family member of the '032 and '712 patents asserted by Corephotonics in this case, and it shares the same specification and discloses embodiments described in the claims of the '032 and '712 patents. Amendments and arguments associated with those amendments were filed on May 15, 2015, which extensively discussed Corephotonics' patent application and analyzed purported differences between its disclosures and the claims of Apple's '027 application. The inventor of Apple's '027 application, Roman Mercado continued to work for Apple through the introduction of the iPhone 7 Plus, and he appears to still be an employee of Apple.

40. Apple filed another patent application, U.S. Patent App. No. 14/871,720 (the "'720 application") in September 2015, which issued as U.S. Patent No. 9,769,389. Among the named inventors of this patent is Scott Miller, who appears to be currently employed as a camera engineer at Apple. During the prosecution of this application, on March 24, 2016, Apple cited Corephotonics' asserted '291 patent in an Information Disclosure Statement ("IDS") form, which describes prior art known by the patent applicant and submitted to the Patent Office.

41. Apple was familiar with and had analyzed the extent of Corephotonics' patent portfolio throughout its pursuit of Apple's own patents. By way of example, the earliest IDS that Apple filed for the '720 application, filed on September 30, 2015, included four references, of which two of the four were Corephotonics patent applications.

42. Apple also disclosed the '291 patent as prior art to its U.S. Patent App. No. 14/871,716 (the "'716 application"), which issued as U.S. Patent No. 9,774,787, in Apple's March 24, 2016 IDS filing. Apple further disclosed the '291 patent as prior art to its U.S. Patent App. No. 15/043,136 (the "'136 application"), which issued as U.S. Patent No. 9,781,345, in Apple's February 12, 2016 IDS filing.

43. Apple also disclosed the Dror Application as prior art to its '720 application, submitted in Apple's March 24, 2016 IDS filing. Apple further disclosed the Dror Application as prior art to its '716 application and its '136 application.

44. Apple also disclosed the published application that issued as Corephotonics' asserted '152 patent, U.S. 2015/0085174, as prior art to its '720 application, submitted in Apple's March 24, 2016 IDS filing. Apple further cited the application that issued as the '152 patent, U.S. 2015/0085174, as prior art to its '716 application, in Apple's March 24, 2016 IDS filing, and its '135 application, in Apple's February 12, 2016 IDS filing.

FIRST CAUSE OF ACTION

Infringement of Patent No. 9,402,032

45. Corephotonics incorporates the foregoing paragraphs as though fully set forth herein.

46. Apple has directly infringed, and continues to directly infringe, at least claim 15 of the '032 patent pursuant to 35 U.S.C. § 271, by making, using, selling, offering to sell, and/or importing within the United States, without authority, the iPhone 7 Plus and the iPhone 8 Plus.

47. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 15 of the '032 patent in connection with the iPhone 7 Plus. Corephotonics reserves the right to modify this description, including, for example, on the basis of information about the iPhone 7 Plus that it obtains during discovery:

Claim 15:

1. A lens assembly, comprising: To the extent the preamble is limiting, the iPhone 7 Plus telephoto lens is a lens assembly.

[1a] *a plurality of refractive lens elements arranged along an optical axis,* The iPhone 7 plus telephoto lens consists of five refractive lens elements arranged along an optical axis.

[1b] *wherein at least one surface of at least one of the plurality of lens elements is aspheric,* Each of the five lens elements in the iPhone 7 Plus telephoto lens is aspheric.

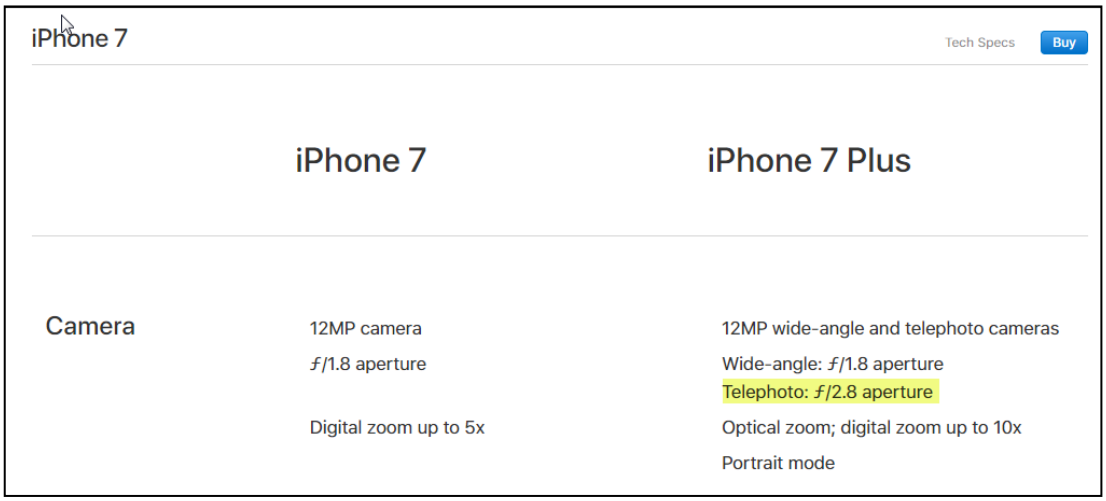
[1c] *wherein the lens assembly has an effective focal length (EFL), and wherein the lens assembly has a total track length (TTL) of 6.5 millimeters or less and a ratio TTL/EFL of less than 1.0,* The TTL of the iPhone 7 Plus telephoto lens is less than 6.0 mm and its EFL is greater than 6.5 mm. Therefore, the ratio of TTL/EFL in the iPhone 7 Plus telephoto lens is less than 1 (6/6.5 < 1).

[1d] *wherein the plurality of lens elements comprises, in order from an object side to an image side, a first lens element with positive refractive power and a second lens element with negative refractive power, wherein a focal length f1 of the first lens element is smaller than TTL/2.* The first lens element in the iPhone 7 Plus telephoto lens, from an object side, has a positive refractive power and a focal length less than 2.7 mm. The TTL of the iPhone 7 Plus telephoto lens is greater than 5.8 mm. The second lens element has a negative refractive power. The focal length of the first lens element is less than TTL/2 (2.7 < 5.8/2).

13. The lens assembly of claim 1, wherein the first lens element has an Abbe number greater than 50 and the second lens element has an Abbe number smaller than 30. The first lens in the iPhone 7 Plus telephoto lens has an Abbe number greater than 50. The second lens in the iPhone 7 Plus telephoto lens has an Abbe number less than 30.

14. The lens assembly of claim 13, wherein the first lens element has a convex object-side surface and a convex or concave image-side surface and wherein the second lens element is a meniscus lens having a convex object-side surface. In the iPhone 7 plus telephoto lens, the first lens has a convex object-side surface and a convex image-side surface, and the second lens element is a meniscus lens having a convex object-side surface.

15. The lens assembly of claim 14, wherein a lens assembly F # is smaller than 2.9. The iPhone 7 Plus telephoto lens has an F# of 2.8. *See* https://www.apple.com/iphone-7/specs/:



48. As set forth in its Factual Allegations of this Complaint, Apple's infringement of the '032 patent has been and continues to be wanton, deliberate, egregious, and willful. Prior to the introduction of the Accused Products, Apple was engaged in five years of technical and business discussions surrounding a potential collaboration. Apple repeatedly expressed interest in learning more about and ultimately obtaining the right to use Corephotonics' technology and intellectual property in the software and hardware associated with small-format multi-aperture cameras for use in mobile devices. Corephotonics disclosed a telephoto lens assembly design to Apple and told Apple that it was seeking patent protection on its small photo telephoto lens assembly designs as early as June 2013. Apple later sought and obtained samples of lens assemblies like those disclosed in the '032 patent. Corephotonics continued to inform Apple that

it had a substantial and growing portfolio of patents and patent applications in that space, which included the lens design that could be used for a small-format telephoto camera suitable for use in mobile devices, the subject matter of the '032 patent. Apple further learned of and had to analyze the features claimed in the '032 patent in its own patenting efforts. Even while the '032 patent was pending and after it had published, Apple knew that a patent on a small format telephoto design that claimed the design features of the embodiments disclosed in its specification was pending and potentially going to issue.

49. Accordingly, by the date the '032 patent issued or thereafter Apple should have known of the patent's existence. Thus, when Apple put on sale the iPhone 7 Plus and included in it a small format telephoto camera using Corephotonics' intellectual property, it either knew of the issued claims of the '032 patent or was willfully blind to them. Apple also would have known or was willfully blind to its infringement of the '032 patent by then. Shortly after Apple announced the iPhone 7 Plus, Corephotonics tried to inform Apple of specific patents and patent applications in the context of a business negotiations. Apple's employees, however, refused to receive the patents in the context of business and technical discussions. Apple at that time either knew or was willfully blind to the specific patents that they were infringing, including the '032 patent. Apple further compounded its infringement, either with knowledge or willful blindness in wanton disregard to Corephotonics' rights under the '032 patent, with its introduction of the iPhone 8 Plus. Corephotonics ultimately sent Apple a letter stating that Corephotonics had examined Apple's iPhone 7 Plus and 8 Plus products and believed that they were infringing the '032 patent, and Corephotonics thereafter filed the original Complaint alleging Apple's infringement of the '032 patent. Even in spite of that Complaint being filed, and Apple having already had extensive knowledge of and recognizing Corephotonics' inventive contributions in the '032 patent, Apple has continued to infringe the '032 patent. Apple's conduct, and its past and continued willful infringement of the '032 patent, has been egregious.

50. For at least the foregoing and other reasons set forth herein, Corephotonics is entitled to enhanced damages for Apple's infringement of the '032 patent in accordance with 35 U.S.C. § 284.

51. As set forth in the Factual Allegations in this Complaint, Apple has also had knowledge of or been willfully blind to its infringement of the '032 patent such that based on that knowledge or willful blindness, it has also indirectly infringed the '032 patent since at least the date of issuance of the '032 patent and the date of the public introduction of the iPhone 7 Plus on September 7, 2016.

52. Apple has also had actual knowledge of Corephotonics' rights in the '032 patent and details of Apple's infringement of the '032 patent based on at least the filing of Corephotonics' original Complaint and, based on that knowledge, is also indirectly infringing the '032 patent.

53. Apple manufactures, uses, imports, offers for sale, and/or sells the iPhone 7 Plus and the iPhone 8 Plus with knowledge of or willful blindness to the fact that its actions will induce Apple's customers and end users to infringe the '032 patent by at least using the telephoto lens on the iPhone 7 Plus and the iPhone 8 Plus.

54. Apple actively and knowingly induces its customers and end users to infringe the '032 patent by publishing information promoting the zoom features of the iPhone 7 Plus and the iPhone 8 Plus, and by providing its customers and end users with instructions for using those features. For example, Apple highlighted the benefits of the telephoto lens when it introduced the iPhone 7 Plus. *See* https://www.youtube.com/watch?v=NS0txu_Kzl8 at 1:08:22, and https://www.youtube.com/watch?v=Q6dsRpVyyWs at 1:05.

55. As the direct and proximate result of Apple's conduct, Corephotonics has suffered and, if Apple's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Corephotonics' remedy at law is inadequate, Corephotonics seeks, in addition to damages, permanent injunctive relief. Corephotonics' business operates in a competitive market and it will continue suffering irreparable harm absent injunctive relief.

56. Corephotonics is entitled to injunctive relief and damages of no less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

57. Apple's infringement of the '032 patent is exceptional and entitles Corephotonics to attorneys' fees and costs under 35 U.S.C. § 285.

SECOND CAUSE OF ACTION

Infringement of Patent No. 9,568,712

58. Corephotonics incorporates the foregoing paragraphs as though fully set forth herein.

59. Apple has directly infringed, and continues to directly infringe, at least claims 15, 16, and 19 of the '712 patent pursuant to 35 U.S.C. § 271, by making, using, selling, offering to sell, and/or importing within the United States, without authority, the iPhone 7 Plus and iPhone 8 Plus.

60. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 15 of the '712 patent in connection with the iPhone 7 Plus, which applies similarly to the iPhone 8 Plus. Corephotonics reserves the right to modify this description, including, for example, on the basis of information about the iPhone 7 Plus and iPhone 8 Plus that it obtains during discovery:

Claim 15:

15. A lens assembly, comprising: To the extent the preamble is limiting, the iPhone 7 Plus telephoto lens is a lens assembly.

[15a] *a plurality of refractive lens elements arranged along an optical axis,* The iPhone 7 plus telephoto lens consists of five refractive lens elements arranged along an optical axis.

[15b] *wherein the lens assembly has an effective focal length (EFL) and a total track length (TTL) smaller than the effective focal length (EFL),* The TTL of the iPhone 7 Plus telephoto lens is less than 6.0 mm and its EFL is greater than 6.5 mm. Therefore, the TTL is smaller than the EFL in the iPhone 7 Plus telephoto lens (6 < 6.5).

[15c] *the plurality of refractive lens elements comprising, in order from an object plane to an image plane along the optical axis, a first lens element having positive optical power, a pair of second and third lens elements having together a negative optical power, and a combination of fourth and fifth lens elements, the fourth lens*

> *element separated from the third lens element by an air gap greater than TTL/5.* The first lens element in the iPhone 7 Plus telephoto lens, from an object side, has a positive refractive power and the second lens element has a negative refractive power. The telephoto lens in the iPhone 7 Plus camera also has a fourth and a fifth lens element where the gap between the fourth lens element and the third lens element is greater than 1.4 mm. The TTL of the iPhone 7 Plus telephoto lens is less than 6.0 mm. TTL/5 is, therefore, less than 1.2 mm. The gap between the third lens element and the fourth lens element (1.4 mm) is, therefore, greater than TTL/5 (1.4 > 1.2).

61. As set forth in its Factual Allegations of this Complaint, Apple's infringement of the '712 patent has been and continues to be wanton, deliberate, egregious, and willful. Prior to the introduction of the Accused Products, Apple was engaged in five years of technical and business discussions surrounding a potential collaboration. Apple repeatedly expressed interest in learning more about and ultimately obtaining the right to use Corephotonics' technology and intellectual property in the software and hardware associated with small-format multi-aperture cameras for use in mobile devices. Corephotonics disclosed a telephoto lens assembly design to Apple and told Apple that it was seeking patent protection on its small photo telephoto lens assembly designs as early as June 2013. Apple later sought and obtained samples of lens assemblies like those disclosed in the '712 patent. Corephotonics continued to inform Apple that it had a substantial and growing portfolio of patents and patent applications in that space, which included the lens design that could be used for a small-format telephoto camera suitable for use in mobile devices, the subject matter of the '712 patent. Apple further learned of and had to analyze the features claimed in the '712 patent in its own patenting efforts. Even while the '712 patent was pending and after it had published, Apple knew that a patent on a small format telephoto design that claimed the design features of the embodiments was potentially going to issue. Shortly after Apple announced the iPhone 7 Plus, Corephotonics tried to inform Apple of its specific patents and patent applications in the context of a business negotiations. Apple's employees, however, refused to receive the patents in the context of business and technical discussions.

62. Accordingly, by the date the '712 patent issued or thereafter, Apple should have known of the patent's existence. Apple had already had begun selling iPhone 7 Plus in the marketplace by that time, which included a small format telephoto camera lens assembly. Apple, therefore, either knew it was infringing the '712 patent or was willfully blind to its infringement. Apple further compounded its infringement, either with knowledge or willful blindness and in wanton disregard to Corephotonics' rights under the '712 patent, with its introduction of the iPhone 8 Plus. Corephotonics ultimately sent Apple a letter stating that Corephotonics had examined Apple's iPhone 7 Plus and 8 Plus products and believed that they were infringing the '712 patent, and Corephotonics thereafter filed the original Complaint alleging Apple's infringement of the '712 patent. Even in spite of that Complaint being filed, and Apple having already had extensive knowledge of and recognizing Corephotonics' inventive contributions in the '712 patent, Apple has continued to infringe the '712 patent. Apple's conduct, and its past and continued willful infringement of the '712 patent, has been egregious.

63. For at least the foregoing and other reasons set forth herein, Corephotonics is entitled to enhanced damages for Apple's infringement of the '712 patent in accordance with 35 U.S.C. § 284.

64. As described in the Factual Allegations in this Complaint, Apple has also had knowledge of or been willfully blind to its infringement of the '712 patent such that based on that knowledge or willful blindness, it has also indirectly infringed the '712 patent since at least as early as the date of issuance of the '712 patent.

65. Apple has also had actual knowledge of Corephotonics' rights in the '712 patent and details of Apple's infringement of the '712 patent based on at least the filing of Corephotonics' original Complaint and, based on that knowledge, is also indirectly infringing the '032 patent.

66. Apple manufactures, uses, imports, offers for sale, and/or sells the Accused Products with knowledge of or willful blindness to the fact that its actions will induce Apple's customers and end users to infringe the '712 patent by using the telephoto lens on the Accused Products.

67. Apple actively and knowingly induces its customers and end users to infringe the '712 patent by publishing information promoting the zoom features of the Accused Products, and by providing its customers and end users with instructions for using those features. For example, Apple highlighted the benefits of the telephoto lens when it introduced the iPhone 7 Plus. *See* https://www.youtube.com/watch?v=NS0txu_Kzl8 at 1:08:22, https://www.youtube.com/watch?v=Q6dsRpVyyWs at 1:05.

68. As the direct and proximate result of Apple's conduct, Corephotonics has suffered and, if Apple's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Corephotonics' remedy at law is inadequate, Corephotonics seeks, in addition to damages, preliminary and permanent injunctive relief. Corephotonics' business operates in a competitive market and will continue suffering irreparable harm absent injunctive relief.

69. Corephotonics is entitled to injunctive relief and damages of no less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

70. Apple's infringement of the '712 patent is exceptional and entitles Corephotonics to attorneys' fees and costs under 35 U.S.C. § 285.

THIRD CAUSE OF ACTION

Infringement of Patent No. 9,185,291

71. Corephotonics incorporates the foregoing paragraphs as though fully set forth herein.

72. Apple has directly infringed, and continues to directly infringe, at least claims 1, 2, 3, 4, 5, 6, 7, 10, 12, and 13 of the '291 patent pursuant to 35 U.S.C. § 271, by making, using, selling, offering to sell, and/or importing within the United States, without authority, the iPhone 7 Plus.

73. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 12 of the '291 patent in connection with the iPhone 7 Plus. Corephotonics reserves the right to modify this description, including, for example, on the basis of information about the iPhone 7 Plus that it obtains during discovery:

12. A method for obtaining zoom images of an object or scene in both still and video modes using a digital camera, the method comprising the steps of: To the extent the preamble is limiting, Apple practices a method for enabling the iPhone 7 Plus to use its digital camera to obtain zoom images of an object or a scene in both still and video modes.

a) providing in the digital camera a Wide imaging section having a Wide lens with a Wide field of view (FOV), a Wide sensor and a Wide image signal processor (ISP), a Tele imaging section having a Tele lens with a Tele FOV that is narrower than the Wide FOV, a Tele sensor and a Tele ISP, and a camera controller operatively coupled to the Wide and Tele imaging sections; and Apple has provided the iPhone 7 Plus rear-facing digital camera with a wide imaging section having a 28 mm wide- angle lens with an associated field of view, an associated sensor and associated image signal processing, including within the A10 Fusion chip. Apple has also provided the iPhone 7 Plus rear-facing digital camera with a telephoto imaging section having a 56 mm telephoto lens with an associated field of view, an associated sensor and associated image signal processing within the A10 Fusion chip. The field of view associated with the telephoto lens is narrower than the field of view associated with the wide-angle lens. Apple also provides the iPhone 7 Plus with a camera controller coupled to both the wide and telephoto imaging sections. *See* https://support.apple.com/kb/SP744; http://appleinsider.com/articles/16/09/23/apples-iphone-7-camera-delivers-nice-slice-of-enhancements-but-iphone-7-plus-takes-the-cake ("Apple's A10 Fusion chip incorporates an enhanced custom Image Signal Processor that now performs over 100 billion calculations on every photograph it takes.").

b) configuring the camera controller to combine in still mode at least some of the Wide and Tele image data to provide a fused output image of the object or scene from a particular point of view, and Apple has configured the iPhone 7 Plus to combine image data from both the wide imaging section and the telephoto imaging

section. The output image will be either from the point of view of the wide lens or the telephoto lens, depending on the zoom factor. See https://forums.developer.apple.com/thread/63347 from an Apple staff member (emphasis added):

When zoomed, the Dual camera intelligently fuses images from the wide-angle and telephoto cameras to improve image quality. This process is transparent to the user and happens automatically when you take pictures . . . . The point at which the cross over from wide-angle to telephoto happens depends on a variety of factors including current focus position, current zoom factor, and current exposure.

See also https://developer.apple.com/videos/play/wwdc2017/507/ (Transcript of Presentation, 2017 Apple WWDC, Session 507 by Brad Ford (emphasis added)):

So far, when you use the dual camera and take a picture, you still just get one image. It's either from the wide or it's from the tele, depending where you're zoomed, or **if you're in the area between one and 2X you might get portions of both as we do some blending to make an even nicer picture**, but you still only get one.

[b) configuring the camera controller . . .] to provide without fusion continuous zoom video mode output images of the object or scene, each output image having a respective output resolution, wherein the video mode output images are provided with a smooth transition when switching between a lower zoom factor (ZF) value and a higher ZF value or vice versa, and wherein at the lower ZF value the output resolution is determined by the Wide sensor while at the higher ZF value the output resolution is determined by the Tele sensor. Apple has configured the iPhone 7 Plus dual-aperture camera to provide a continuous zoom in video mode, which does not use image fusion. According to Apple "[t]he Dual camera's defining feature is its ability to smoothly transition between wide and tele cameras, acting like a single lens camera with optical zoom at 2x." https://forums.developer.apple.com/thread/63347. Samples of the iPhone 7 Plus' smooth transition in video mode are available at

http://appleinsider.com/articles/16/09/23/apples-iphone-7-camera-delivers-nice-slice-of-enhancements-but-iphone-7-plus-takes-the-cake. Each output image has an output resolution, which is determined by the sensor being used, *i.e.*, wide sensor being used at low zoom factor and telephoto sensor being used at high zoom factor.

74. As set forth in its Factual Allegations of this Complaint, Apple's infringement of the '291 patent has been and continues to be wanton, deliberate, egregious, and willful. Prior to the introduction of the Accused Products, Apple was engaged in five years of technical and business discussions surrounding a potential collaboration. Apple repeatedly expressed interest in learning more about and ultimately obtaining the right to use Corephotonics' technology and intellectual property in the software and hardware associated with small-format multi-aperture cameras for use in mobile devices. As set forth in the foregoing Factual Allegations, Corephotonics described its smooth zoom design concepts to Apple and told Apple that it was seeking patent protection on continuous and smooth zoom transitions for dual-aperture cameras as early as 2014. Corephotonics demonstrated the technology to Apple, and it provided Apple with programs that Apple used to independently test and evaluate Corephotonics' technology. Corephotonics continued to inform Apple that it had a substantial and growing portfolio of patents and patent applications in that space, which included image fusion and smooth zoom for dual-aperture cameras that included telephoto lenses suitable for use in mobile devices, the subject matter of the '291 patent. Apple further knew of the issued '291 patent well enough by March 2016 to cite it as prior art in its patent applications. Shortly after Apple announced the iPhone 7 Plus, which exhibited a continuous zooming feature that used Corephotonics' intellectual property, in particular the '291 patent, Corephotonics tried to inform Apple of its specific patents and patent applications in the context of a business negotiations. Apple's employees, however, refused to receive the patents in the context of business and technical discussions.

75. Accordingly, by the date the '291 patent issued or thereafter, Apple should have known of the patent's existence. Indeed, Apple must have actually known of the issued '291 patent, as Apple cited that patent as prior art in the prosecution of its own patents. Apple subsequently publicly announced and began offering the iPhone 7 Plus. By at least that time, therefore, Apple,

either knew it was infringing the '291 patent or was willfully blind to its infringement. Apple further compounded its infringement, either with knowledge or willful blindness and in wanton disregard to Corephotonics' rights under the '291 patent, with its introduction of the iPhone 8 Plus. Corephotonics ultimately sent Apple a letter stating that Corephotonics had examined Apple's products and believed that Apple was infringing the '291 patent, and Corephotonics thereafter filed the original Complaint alleging Apple's infringement of the '291 patent. Even in spite of that Complaint being filed, and Apple having already had extensive knowledge of and recognizing Corephotonics' inventive contributions in the '291 patent, Apple has continued to infringe the '291 patent. Apple's conduct, and its past and continued willful infringement of the '291 patent, has been egregious.

76. For at least the foregoing and other reasons as set forth herein, Corephotonics is entitled to enhanced damages for Apple's infringement of the '291 patent in accordance with 35 U.S.C. § 284.

77. As described in the Factual Allegations in this Complaint, Apple has also had knowledge of or been willfully blind to its infringement of the '291 patent such that based on that knowledge or willful blindness, it has also indirectly infringed the '291 patent since at least as early as the date of issuance of the '291 patent and the public introduction of the iPhone 7 Plus to the marketplace on September 7, 2016.

78. Apple has also had actual knowledge of Corephotonics' rights in the '291 patent and details of Apple's infringement of the '291 patent based on at least the filing of Corephotonics' original Complaint and, based on that knowledge, is also indirectly infringing the '291 patent.

79. Apple manufactures, uses, imports, offers for sale, and/or sells the Accused Products with knowledge of or willful blindness to the fact that its actions will induce Apple's customers and end users to infringe the '291 patent by using the dual-aperture camera on the Accused Products.

80. Apple actively and knowingly induces its customers and end users to infringe the '291 patent by publishing information promoting the dual-aperture camera of the Accused Products, and by providing its customers and end users with instructions for using that camera.

For example, Apple highlighted the benefits of the dual-aperture camera when it introduced the iPhone 7 Plus. *See* https://www.youtube.com/watch?v=NS0txu_Kzl8 at 1:08:22, https://www.youtube.com/watch?v=Q6dsRpVyyWs at 1:05.

81. As the direct and proximate result of Apple's conduct, Corephotonics has suffered and, if Apple's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Corephotonics' remedy at law is inadequate, Corephotonics seeks, in addition to damages, preliminary and permanent injunctive relief. Corephotonics' business operates in a competitive market and will continue suffering irreparable harm absent injunctive relief.

82. Corephotonics is entitled to injunctive relief and damages of no less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

83. Apple's infringement of the '291 patent is exceptional and entitles Corephotonics to attorneys' fees and costs under 35 U.S.C. § 285.

FOURTH CAUSE OF ACTION

Infringement of Patent No. 9,538,152

84. Corephotonics incorporates the foregoing paragraphs as though fully set forth herein.

85. Apple has directly infringed, and continues to directly infringe, at least claims 1, 2, 3, and 4 of the '152 patent pursuant to 35 U.S.C. § 271, by making, using, selling, offering to sell, and/or importing within the United States, without authority, the iPhone 7 Plus.

86. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 1 of the '152 patent in connection with the iPhone 7 Plus. Corephotonics reserves the right to modify this description, including, for example, on the basis of information about the iPhone 7 Plus that it obtains during discovery:

1. A multi-aperture imaging system comprising: To the extent the preamble is limiting, the iPhone 7 Plus has a two-lens camera and, therefore, has a multi-aperture imaging system.

a) a first camera that provides a first image, the first camera having a first field of view (FOV_1) and a first sensor with a first plurality of sensor pixels covered at least in part with a standard color filter array (CFA); The iPhone 7 Plus rear-facing digital camera has two cameras. The first camera is a wide-angle camera with a 28 mm wide-angle lens having a first field of view to provide a first image. The wide-angle camera has a first sensor, which contains a plurality of sensor pixels. The pixels of the sensor of the wide-angle camera are covered with a standard color filter array.

b) a second camera that provides a second image, the second camera having a second field of view (FOV2) such that FOV2<FOV1 and a second sensor with a second plurality of sensor pixels, the second plurality of sensor pixels being either Clear or covered with a standard CFA, the second image having an overlap area with the first image; and, The iPhone 7 Plus rear-facing digital camera also has a second camera, which is a telephoto camera with a 56 mm telephoto lens having a second field of view to provide a second image that overlaps with the first image. The second field of view of the telephoto camera is narrower than the first field of view of the wide-angle camera. The telephoto camera has a sensor with sensor pixels. These sensor pixels are covered with a standard filter array. *See* https://support.apple.com/kb/SP744.

c) a processor configured to provide an output image from a point of view of the first camera based on a zoom factor (ZF) input that defines a respective field of view (FOV_{ZF}), the first image being a primary image and the second image being a non-primary image, wherein if $FOV_2<FOV_{ZF}<FOV_1$ then the point of view of the output image is that of the first camera, the processor further configured to register the overlap area of the second image as non-primary image to the first image as primary image to obtain the output image. The iPhone 7 Plus includes an image signal processor (ISP) in the A10 SOC, which is programmed to provide an output image from the point of view of the wide-angle camera when the field of view at

the selected zoom factor is greater than the telephoto field of view but less than the wide-angle field of view. The ISP is also programmed to register the overlap of the two images and, using the wide-angle image as the primary image, use both the wide-angle and telephoto images to produce the output image. *See* https://forums.developer.apple.com/thread/63347 from an Apple staff member (emphasis added):

When zoomed, the Dual camera intelligently fuses images from the wide-angle and telephoto cameras to improve image quality. This process is transparent to the user and happens automatically when you take pictures . . . . The point at which the cross over from wide-angle to telephoto happens depends on a variety of factors including current focus position, current zoom factor, and current exposure.

See also https://developer.apple.com/videos/play/wwdc2017/507/ (Transcript of Presentation, 2017 Apple WWDC, Session 507 by Brad Ford (emphasis added)):

So far, when you use the dual camera and take a picture, you still just get one image. It's either from the wide or it's from the tele, depending where you're zoomed, or **if you're in the area between one and 2X you might get portions of both as we do some blending to make an even nicer picture**, but you still only get one.

87. As set forth in its Factual Allegations of this Complaint, Apple's infringement of the '152 patent has been and continues to be wanton, deliberate, egregious, and willful. Prior to the introduction of the Accused Products, Apple was engaged in five years of technical and business discussions surrounding a potential collaboration. Apple repeatedly expressed interest in learning more about and ultimately obtaining the right to use Corephotonics' technology and intellectual property in the software and hardware associated with small-format multi-aperture cameras for use in mobile devices. As set forth in the foregoing Factual Allegations, Corephotonics described its image fusion concepts to Apple and told Apple that it was seeking patent protection on its technology for image fusion between wide-angle and telephoto lenses for dual-aperture cameras in June 2013. From that time through 2014. Corephotonics demonstrated the technology to Apple, and it provided Apple with programs that Apple used to independently test and evaluate

Corephotonics' technology. Corephotonics continued to inform Apple that it had a substantial and growing portfolio of patents and patent applications in that space, which included image fusion for dual-aperture cameras that included telephoto lenses suitable for use in mobile devices, the subject matter of the '152 patent. Apple was familiar with Corephotonics' patent applications, and Apple cited the application that issued as the '152 patent as prior art in its efforts to obtain small-format camera patents. Even while the '152 patent was pending and after it had published, Apple knew that a patent on a small format telephoto design that claimed the design features of the embodiments disclosed in its specification was pending and potentially going to issue.

88. Accordingly, by the date the '152 patent issued or thereafter Apple should have known of the patent's existence. Thus, when Apple put on sale the iPhone 7 Plus and included in it a small format telephoto camera using Corephotonics' intellectual property, it either knew of the issued claims of the '152 patent or was willfully blind to them. Apple also would have known or was willfully blind to its infringement of the '152 patent by then. Shortly after Apple announced the iPhone 7 Plus, Corephotonics tried to inform Apple of specific patents and patent applications in the context of a business negotiations. Apple's employees, however, refused to receive the patents in the context of business and technical discussions. Apple at that time either knew or was willfully blind to the specific patents that they were infringing, including the '152 patent. Corephotonics ultimately sent Apple a letter stating that Corephotonics had examined Apple's products and believed that Apple was infringing the '152 patent, and Corephotonics thereafter filed the original Complaint alleging Apple's infringement of the '152 patent. Even in spite of that Complaint being filed, and Apple having already had extensive knowledge of and recognizing Corephotonics' inventive contributions in the '152 patent, Apple has continued to infringe the '152 patent. Apple's conduct, and its past and continued willful infringement of the '152 patent, has been egregious.

89. For at least the foregoing and other reasons set forth herein, Corephotonics is entitled to enhanced damages for Apple's infringement of the '152 patent in accordance with 35 U.S.C. § 284.

90. Apple has also had actual knowledge of Corephotonics' rights in the '152 patent and details of Apple's infringement of the '152 patent based on at least the filing of Corephotonics' original Complaint and, based on that knowledge, is also indirectly infringing the '152 patent.

91. Apple manufactures, uses, imports, offers for sale, and/or sells the Accused Products with knowledge of or willful blindness to the fact that its actions will induce Apple's customers and end users to infringe the '152 patent by using the dual-aperture camera on the Accused Products.

92. Apple actively and knowingly induces its customers and end users to infringe the '152 patent by publishing information promoting the dual-aperture camera of the Accused Products, and by providing its customers and end users with instructions for using that camera. For example, Apple highlighted the benefits of the dual-aperture camera when it introduced the iPhone 7 Plus. *See* https://www.youtube.com/watch?v=NS0txu_Kzl8 at 1:08:22, https://www.youtube.com/watch?v=Q6dsRpVyyWs at 1:05.

93. As the direct and proximate result of Apple's conduct, Corephotonics has suffered and, if Apple's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Corephotonics' remedy at law is inadequate, Corephotonics seeks, in addition to damages, preliminary and permanent injunctive relief. Corephotonics' business operates in a competitive market and will continue suffering irreparable harm absent injunctive relief.

94. Corephotonics is entitled to injunctive relief and damages of no less than a reasonable royalty in accordance with 35 U.S.C. §§ 271, 281, 283, and 284.

95. Apple's infringement of the '152 patent is exceptional and entitles Corephotonics to attorneys' fees and costs under 35 U.S.C. § 285.

DEMAND FOR A JURY TRIAL

96. Corephotonics hereby demands a jury trial for all causes of action, claims, or issues in this action that are triable as a matter of right to a jury.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Corephotonics respectfully requests the following relief:

A. Judgment in Corephotonics' favor and against Apple on all causes of action alleged herein;

B. An award of damages to Corephotonics in an amount to be further proven at trial;

C. Permanent injunctive relief against Apple;

D. A finding that this case is exceptional under 35 U.S.C. § 285 and that Corephotonics be awarded its attorneys' fees;

E. An award of enhanced damages to Corephotonics as a result of Apple's willful infringement;

F. An award of prejudgment and post-judgment interest, costs and other expenses; and

Such other and further relief as the Court may deem to be just and proper.

DATED: April 11, 2018

Respectfully submitted,

RUSS, AUGUST & KABAT

By: */s/ Marc Fenster*

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CERTIFICATE OF SERVICE

I certify that counsel of record who are deemed to have consented to electronic service are being served on April 11, 2018, with a copy of this document via the Court's CM/ECF systems per Local Rule CV-5(a)(3). Any other counsel will be served by electronic mail, facsimile, overnight delivery and/or First Class Mail on this date.

/s/ *Marc A. Fenster*